

Importance of Diabetes: Community Based Screening and Education in Shirati, Tanzania

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Introduction

- Globally, 425 million adults have diabetes with 1 in 2 adults with diabetes remaining undiagnosed.
- The lack of national data makes it difficult to find accurate and reliable measures of diabetes prevalence and disease burden.
- The aim of this study is to gather preliminary data on the number of diagnosed and undiagnosed diabetes, assess diabetes awareness, and to measure the importance of community-based diabetes screening and education in Shirati.

Hypothesis

- We hypothesize that community-based screening and education will improve early diagnosis and awareness of diabetes in Shirati, Tanzania.

Setting

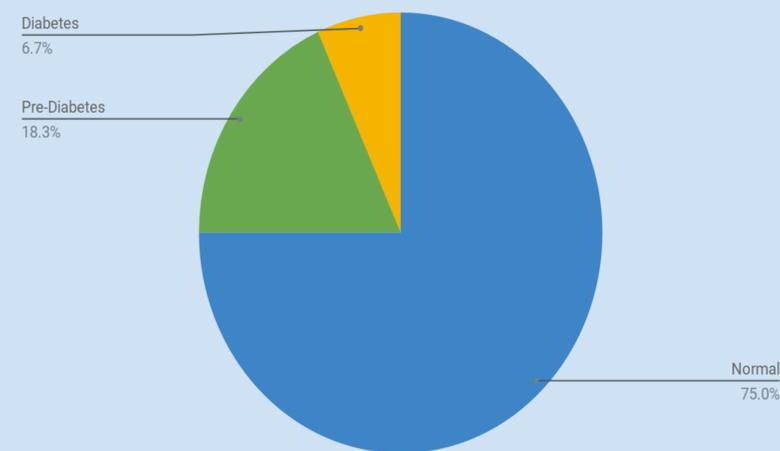
- Touro University research team partnered with Shirati District Hospital to screen for diabetes at a local market on June 10th and 17th of 2019. Screening was available to anyone present at the market who chooses to participate in the study. Translators briefed potential subjects on the purpose of the study and what to expect upon participation. Informed consent was obtained from participants.

Materials & Methods

- **Consent:** Obtained verbally with the use of translators to inform subjects about purpose and procedures of the study.
- **Data Collection:** Biometrics data was collected including blood pressure and glucose level. A survey was used to collect data on demographics, past medical history and knowledge of diabetes.
- **Screening:** Blood pressure was measured using a blood pressure monitor (Walgreens Deluxe Arm Blood Pressure Monitor 2016), and glucose level was measured using a finger-prick test (Care Touch Diabetes Testing Kit). Blood glucose was graded as fasting or non-fasting.
- **Provided:** Diabetes Education, referral to the hospital if abnormal glucose levels and given a voucher for the first visit to Shirati KMT Hospital.
- **Statistics:** Descriptive statistics including prevalence and t-statistic were used to analyze the data using excel.

Results

Figure 1



- A total of 105 participants completed screening
- 24.8% had elevated blood glucose, with no difference between genders ($p=.382$)
- 15.2% of the total participants self-reported previous diagnosis or pre-diabetes or diabetes, 8 of which ($n=16$) had an elevated blood glucose at the time of screening.
- In the fasting hyperglycemia category, 10.5% of patients had SBP >140 , in random glucose category 7% or participants had SBP >140 . There is a minor positive correlation between blood pressure and blood glucose ($r=.221$)
- Knowledge assessment across all participants had a mean of $43.3\% \pm 19$. There were no significant differences between gender scores ($p=.851$) or between normal and elevated glucose groups ($p=.382$).
- Ten participants with abnormal glucose levels presented at Shirati District Hospital for a check-up within two weeks following the screening.



Conclusion

- The Shirati community is seeing a high prevalence of diabetes, often presenting at later stages of the disease with associated comorbidities. In addition, half of those who have been previously diagnosed with pre-diabetes and diabetes presented with uncontrolled blood sugar. Many of the participants who were advised to visit their doctor actually followed-up at the hospital, demonstrating they perceived importance of this screening and recommendations for care. Community-based screenings and education can be beneficial as a measure for prevention and early intervention, especially in areas with poor access and low-resources. Ways to improve follow-up of patients upon initial diagnosis can be explored.

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Questionnaire

1. What is your age? _____
2. Male or Female (circle): Male Female
3. Have you ever been told you have diabetes: Yes No
a. if so, do you have Type 1 or Type 2? (circle)
4. Have you been diagnosed with Pre-diabetes? Yes No
5. Have you been diagnosed with any other illness
(i.e. HIV, hypertension, cardiovascular disease)?
 1. How concerned are you about being diagnosed or having diabetes?
Mildly Concerned Moderately Concerned Very Concerned
0 1 2 3 4 5 6 7 8 9 10
7. Have you eaten in the last 6 hours? Yes No
8. Diabetes is defined as: (circle one)
 - a. too much sugar or glucose in your bloodstream
 - b. Too much insulin, a hormone in your bloodstream
 - c. Weighing too much
 - d. I don't know
9. High blood glucose may be caused by:
 - a. Not enough insulin
 - b. Skipping meals
 - c. Delaying your snack
 - d. Skipping your exercise
 - e. I don't know

10. Which of the following is usually NOT associated with diabetes
 - a. Vision problems
 - b. Kidney
 - c. Nerve
 - d. Lung
 - e. I don't know
11. Numbness and tingling may be a symptom of
 - a. Kidney disease
 - b. Nerve disease
 - c. Eye disease
 - d. Liver disease
 - e. I don't know
12. For a person in good control, what effect does exercise have on blood glucose
 - a. Lowers it
 - b. Raises it
 - c. Has no effect
 - d. I don't know
13. True or False: There are many different causes of diabetes
14. True or False: Nutrition affects your risk for diabetes
15. True or False: Type 1 diabetes is the most common form of diabetes



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